

5 WASTE HAZARDOUS SUBSTANCES



Summary

RPS objectives

- Avoid remedy or mitigate the adverse effects on people and the wider environment arising from the storage, use, transportation and disposal of hazardous substances.
- Avoid, remedy or mitigate the adverse effects of the risks to people and the wider environment from existing contaminated sites.

Pressures and state

- There are many industries using waste hazardous substances throughout the region particularly fuels, herbicides and pesticides.
- The types of waste hazardous substances requiring disposal in the region.
- Incidents involving waste hazardous substances, about 70 per year, are mostly fuel spills.

Doing well

- Increasing awareness of the effects of the inappropriate use and disposal, of hazardous substances.
- The volumes of hazardous substances requiring disposal are not large and are slowly decreasing.
- Inspections of workplaces using and storing waste hazardous substances.
- Providing a public drop-off and collection service for waste hazardous substances and carrying out safe and correct storage and disposal.
- Ongoing monitoring and remediation of significant contaminated sites as required.

Areas for improvement

- Work towards the targets of the New Zealand Waste Strategy, including upgrading the contaminated sites database for the region.

5.1 Introduction

Waste hazardous substances

A hazardous substance has one or more of the following properties: Explosive, oxidising, corrosive, flammable, can cause acute, chronic, immediate or delayed toxicity or has environmental persistence and ecotoxicity. There are a wide range of substances that have one or more of these properties.

There are approximately 40 different industries from the Hazardous Activities and Industries List (HAIL) (MFE 2004) in Northland that use hazardous substances on a daily basis as part of their manufacturing process and around 500 industrial sites. These industries in particular include the:

- Agriculture industry (insecticides and pesticides).
- Horticulture industry (insecticides).
- Forestry industry (timber treatment chemicals).

In addition there are a number of smaller industries that as part of their processes use hazardous substances. These include:

- Vehicle spray painters (solvent based paints).
- Boat builders (solvents and glues).
- Service stations (petrol, oil and gases).

In our homes on a daily basis we are exposed to hazardous substances in some shape or form. We use household cleaners, pool chemicals, herbicides, pesticides, and a wide range of petroleum-based products. In many cases we are unaware that we are using hazardous substances.



Examples of waste hazardous substances including household cleaners, pool chemicals, insecticides and old, redundant herbicides.

Contaminated sites

A contaminated site is defined as a site at which hazardous substances occur at concentrations above background levels and where assessment indicates it poses, or is likely to pose an immediate or long-term hazard to human health or the environment (ANZECC 1992).

In 2001 the Australian and New Zealand Environment and Conservation Council (ANZECC), was dis-established and replaced by the Environment Protection and Heritage Council, of which New Zealand is a member, and the National Environment Protection Council.

The current NZ Policy framework for contaminated land is based on a mix of measures that includes laws and regulations, guidelines and funding arrangements.

By definition the management of contaminated sites is closely linked to the management of waste hazardous substances.

Regional Policy Statement objectives

The objectives of the Regional Policy Statement for Northland (NRC 2002) for waste hazardous substances and contaminated sites are:

- Avoid remedy or mitigate the adverse effects on people and the wider environment arising from the storage, use, transportation and disposal of hazardous substances.
- Avoid, remedy or mitigate the adverse effects of the risks to people and the wider environment from existing contaminated sites.

Hazardous substances come in a variety of forms and are used in a wide range of different situations throughout the region. If they are improperly used, transported or disposed of, they represent a threat to human health and the life-supporting capacity of soil and water resources. Minimising the risk of such improper use is the key to preventing or mitigating their likely adverse effects on the environment.

Environmental results anticipated

The following is the anticipated environmental results after the implementation of the hazardous substances policies in the Regional Policy Statement (RPS):

- Increased public awareness of the risks associated with the improper use of hazardous substances.
- A reduction in the amount of hazardous waste requiring disposal.
- A reduction in the number of incidents of unauthorised disposal of hazardous waste.
- Greater control over the use of contaminated sites and protection against serious off-site environmental damage.
- Continued access to hazardous waste storage and disposal facilities.

Resource Management Act 1991

Under the Resource Management Act 1991 Regional Council responsibilities relating to hazardous substances include:

- Controlling the discharge of contaminants to the environment (Section 15);
- The control of the use of land for the purpose of - the prevention or mitigation of any adverse effects of the storage, use, disposal and transportation of hazardous substances. (Section 30); and
- The investigation of land for the purposes of identifying and monitoring contaminated land. (Section 30)

Other legislation

Prior to the introduction of the Hazardous Substances and New Organisms Act in 1996 hazardous substances were controlled under the following legislation: Dangerous Good

Act 1974, Toxic Substances Act 1979, Explosives Act 1957, Pesticides Act 1979, Animals Act 1967, Plants Act 1970 and parts of the Fertiliser Act 1982.

Under the previous legislation only one hazardous property of a substance may have been considered so not all the hazardous properties were managed and most of the legislation was not designed to protect the environment. For example, a flammable substance would have triggered controls for just the flammability properties and may have no controls relating to the toxic or ecotoxic properties.

Under previous legislation in New Zealand there were many examples where humans suffered ill effects through contact with hazardous substances, and land contaminated by hazardous substances.

Hazardous Substances and New Organisms Act 1996

The main focus of the Hazardous Substances and New Organisms (HSNO) Act 1996 is the management of the life cycle i.e. identification, packaging, storage, emergency preparedness, tracking, use and disposal of imported and manufactured hazardous substances. The aim is to protect the environment and the health and safety of people and communities, by preventing or managing the adverse effects of hazardous substances.

Responsibilities under the Act

The HSNO Act requires any person associated with hazardous substances to:

- Avoid remedy, or mitigate any adverse effects of that substance on any other person or the environment caused by their actions or errors.
- Comply with any requirements or controls on that hazardous substance.

Every person in New Zealand who is involved with hazardous substances and new organisms has a duty to meet the requirements or controls on that hazardous substance.

Transport of Hazardous Substances

The transport of hazardous substances on land is covered by the Land Transport Rule – Dangerous Goods 2005.



5.2 What are the pressures and state of hazardous substances in Northland?

Similarly to the solid waste management chapter, this chapter on waste hazardous substances differs from other chapters in this SOE Report, in that waste hazardous substances and contaminated sites are not an environment but potential pressures on our environment. Therefore it is clearer to present the **pressures** and **state** of waste hazardous substances together in this section.

Users of waste hazardous substances

Based on the HAIL list (MFE 2004) there are approximately 40 different industries in the region that used hazardous substances on a regular basis as part of their processes, including more than 500 sites. The industry types ranged from petrochemical plants, timber preservation sites and food processing industries to small manufacturing businesses and single-person contractors.

The options available within New Zealand for the disposal of waste hazardous substances are now limited to the lower key substances such as hydrocarbon-based products and some of the less innocuous herbicides and pesticides. The balance of waste hazardous substances now has to be sent overseas for destruction by high-temperature incineration. Council staff members regularly receive enquiries from businesses looking for disposal options for a wide range of hazardous substances.

Environmental incidents

Between January 1994 and December 2006 a total of 1026 incidents involving hazardous substances have been reported to the Regional Council. (This does not include all hazardous substances incidents dealt with under the Department of Labour contract, which are discussed further in Case study 1).

The majority (91% or 938) of these incidents were oil, diesel or other fuel spills, of which 61% (569) were marine spills.



Kit available at service stations for fuel spills

The number of incidents involving hazardous substances, including oil spills peaked in 2000 with a total of 127 incidents as shown in figure 1 (below).

In recent years the number of marine oil spills has decreased, due to a public education and awareness programme run by the Council. On the other hand, the number of incidents involving hazardous substances, excluding oil spills, has increased slightly. This is likely to be a result of increased public awareness. The incidents involving hazardous substances range from chemical fires and chemical spills to incidents involving asbestos or dumpings of unknown substances.

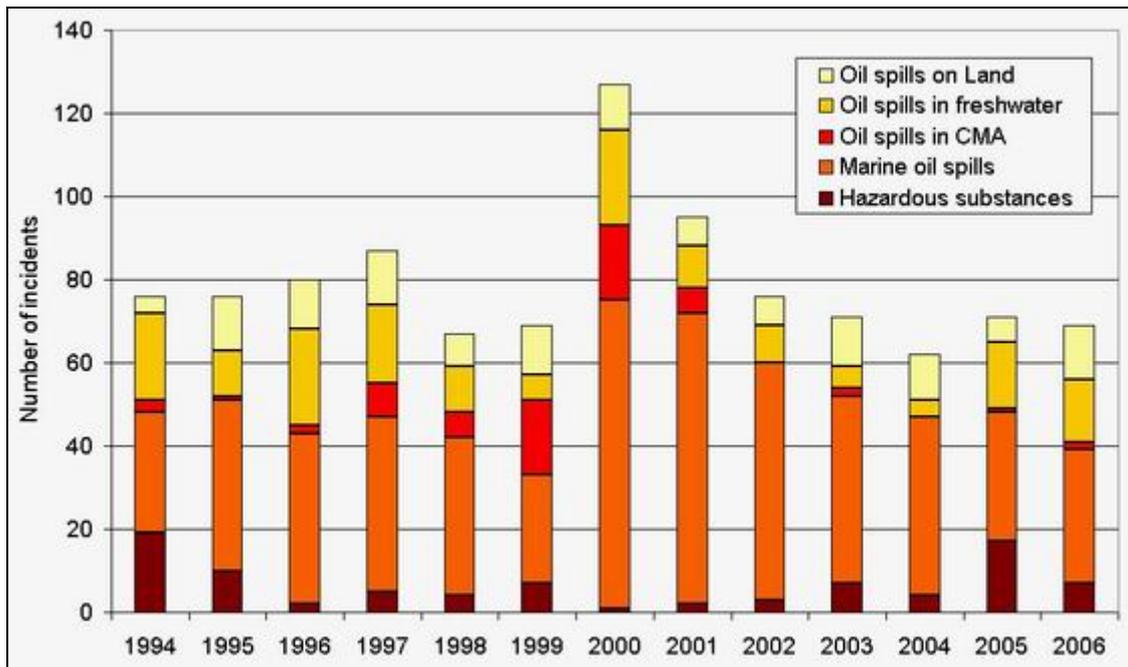


Figure 1: Incidents involving hazardous substances reported to the Council from January 1994 to December 2006, including all oil, diesel and other fuel spills.

Waste hazardous substances collected

From June 1993 to June 2007 over 64 tonnes of waste hazardous substances have been collected from throughout Northland and disposed of or recycled. The amounts collected each year are shown in figure 2 (below). There was a large amount collected in the 2004/2005 year, due to the mobile waste hazardous substances rural collection service run by the Regional Council. In the last two years the amount of waste hazardous substances collected each year has decreased.

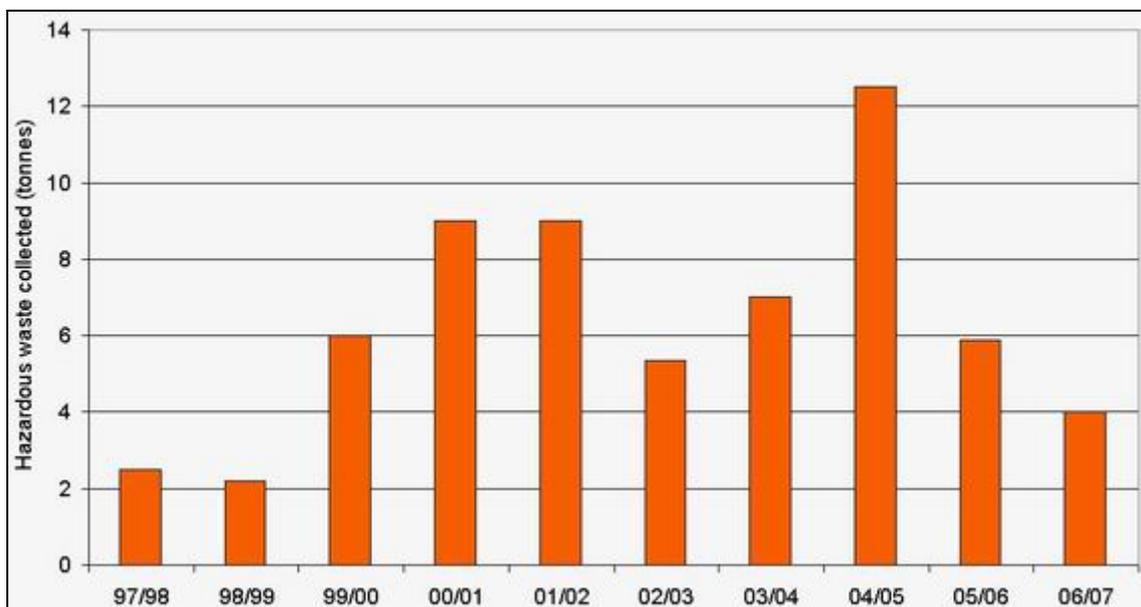


Figure 2: Approximate total waste hazardous substances (tonnes) collected each financial year in Northland for redistribution, storage and disposal.

Each year there has been between five and 15 tonnes of waste hazardous substances collected for long-term storage, redistribution, pre-treatment and/or disposal. Examples of the types of substances collected and their disposal are summarised below.

Insecticides and fungicides

Approximately one to three tonnes of insecticides and fungicides have been collected every year. Over the last five years the majority of these products have originated from the Kerikeri area. Approximately 90% of the total volume of insecticides and fungicides collected are destroyed, due to the deteriorating condition of the contents, illegible labels or unidentifiable contents.

Persistent organic pollutants

Every year a small percentage of the hazardous wastes collected have been persistent organic pollutants (POPs). Some of these POP substances handed in for destruction are particularly hazardous, including quantities of DDT, Chlordane, 245t, 24D dust and polychlorinated biphenyls (PCB's). All of these wastes are sent overseas for destruction by high-temperature incineration.

Solvents and laboratory chemicals

Every year approximately one tonne of used solvents and laboratory chemicals have been collected from schools, commercial laboratories and commercial entities. In the case of the solvents the majority are reconstituted and recycled, while the laboratory chemicals are all disposed of through an Auckland-based specialist waste management company.

Herbicides

Every year approximately three tonnes of herbicides have been collected from throughout the region, predominately from the four jointly owned and operated Northland Regional Council PGG Wrightson stores at Kaitaia, Waipapa, Dargaville and Whangarei.

Approximately 50% of the herbicides collected are still readily available on the market and legal to use. These are redistributed to Landcare groups and other voluntary organisations for vegetation and weed control. The remainder are in a deteriorating condition and exported for destruction.

Empty containers

Every year there has been approximately one to two tonnes of empty containers collected from throughout the region. These containers are not counted in the total of hazardous substances collected in figure 2 (above). All containers are triple rinsed with the rinsate collected and disposed of through a specialist Auckland-based waste management company. The majority of the containers are shredded and disposed of by the contractor.



Farmers and growers will have access to a sustainable environmentally preferred disposal alternative to landfilling or burning their containers when the Agrecovery plastic container stewardship programme starts in 2007 (more information below).

Storage and disposal of hazardous substances

The safe disposal of redundant or unused agricultural chemicals and other waste hazardous substances is an issue for all communities, especially given the very few disposal options available in this country. There are currently only two commercial hazardous waste disposal facilities available in the top half of the North Island. While

some NZ landfills offer co-disposal for low risk hazardous wastes, this option is not available in Northland.

Some of the more hazardous agricultural chemicals held by farmers and horticulturists (especially persistent organic pollutants such as DDT, Dieldrin, Chlordane and 245t) cannot be legally disposed of in New Zealand. These substances require special disposal technologies such as high-temperature incineration. As NZ produces a relatively small volume of waste hazardous substances by world standards, it appears highly unlikely that any NZ-based technology will become available in the short term or indeed long term.

Under the Basel Convention of which NZ is a signatory, hazardous substances can be shipped to other countries for disposal, such as Canada, Europe or the United States. A company based in Auckland currently holds licences for the export and destruction of hazardous substances.



The majority of waste hazardous substances have been sent overseas for destruction (arranged through the Ministry for the Environment). There is presently a small remaining volume of hazardous substances that are packed in United Nations approved containers and stored in licensed premises in Auckland. The Council regularly inspects the integrity of the containers and their contents until they are sent overseas for destruction.

Contaminated sites

It is estimated that there are currently more than 1000 contaminated sites in Northland. These sites are currently being reviewed and a new contaminated sites database designed for accurate data storage.

Site investigations and remediation

There have been many contaminated sites in Northland investigated over the last five years. If the investigative sampling showed contamination then site remediation was carried out. Some of these sites are detailed below:

Service stations

Over the past four years the four oil companies have continued their programme of replacing underground storage tanks at service stations. The programme has been driven by two factors: The length of time that tanks have been in the ground and product loss from the tanks.

In Northland a total of approximately 120 underground storage tanks have been removed, each site remediated if required, and the tanks replaced or the service station closed down.



Oil storage sites

During the past few years two major bulk petroleum storage sites adjacent to the Port Whangarei industrial area have been demolished and remediated to industrial land use standards. In addition a smaller site in Kaikohe used for the bulk storage of petroleum-based products has also been demolished and the site remediated to industrial land use standards.

Timber treatment sites

Three timber treatment sites at Mangawhai, Kaitaia and Haruru Falls have been investigated by the Council. At Haruru Falls and Kaitaia extensive remediation works have been undertaken. At the Mangawhai site the contamination levels encountered met the industrial standards for contaminated sites (MFE 1997) and were much lower than at the Haruru Falls and Kaitaia sites. For more information refer to case study 2.

There has also been two timber treatment sites at Tinopai and Dargaville investigated and successfully remediated by Carter Holt Harvey. The entire process was overseen by the Regional Council. The Regional Council also carried out a site investigation of the Benchmark timber treatment site at Waipapa. Benchmark carried out extensive remediation and the Council showed that the site was successfully remediated with validation sampling.

Animal Dip Sites

Four former animal dip sites located at Mimiwhangata, Kaeo, Mamaranui and Kerikeri have been investigated for contamination.

The only site requiring remediation was the public animal dip site at Kaeo that was formerly owned and operated by the Mangonui County Council. The land where this dip was sited is now in public ownership.



Sheep dipping in New Zealand, around 1924, courtesy of Adkins Collection, Alexander Turnbull Library.

5.3 What is being done?

Monitoring

Many of the industries in Northland that store and use hazardous substances are monitored on a regular basis by NRC staff. The monitoring of these industries has increased since the signing of a contract with the Department of Labour to undertake inspections of workplaces storing and using hazardous substances.

Collection and operational depots

The Regional Council and PGG Wrightson Limited jointly operate four collection depots, located in Kaitaia, Waipapa, Dargaville and Whangarei. The PGG Wrightson collection depots accept all received agricultural chemicals, which are documented before being placed in the stores. Once stored, the substances become the responsibility of the Regional Council. The substances are regularly collected and transported to the Council's storage facility in Whangarei.

The Regional Council facility is specially designed for waste hazardous substances. At this site the hazardous substances are repacked, labelled and placed in temporary storage until being despatched to Auckland for long-term storage or disposal.



Regional Council hazardous waste storage facility.

Spill and safety equipment is available on-site at all PGG Wrightson collection depots, in the event of an emergency such as the accidental spill of hazardous substances. The Council regularly updates emergency procedures, as well as restocking equipment when necessary.

The Council also operates a mobile collection service where individual properties throughout Northland are visited to recover chemicals that may be leaking, require repacking or are in a deteriorating condition. The Council also provides assistance to private organisations requiring chemical disposal including the collection of laboratory wastes from schools and industrial wastes (such as solvents and timber treatment sludges) on a cost recovery basis.

Far North and Whangarei District Councils also have hazardous waste stores, from which the Regional Council collects all hazardous waste substances and special drop off areas where the public can leave used batteries and waste oil, which the district councils dispose off.

Agrecovery programme

Agrecovery is a national plastic container stewardship programme for the agriculture and forestry sector. It will provide farmers and growers with access to a sustainable environmentally preferred disposal alternative to landfilling and/or burning their containers.

The programme will be funded through a levy on product put in the market by participating brand owners (agriculture and forestry product manufacturers). In most regions the Agrecovery Foundation will manage all facets of the scheme.

In the Northland Region the Council will initially manage the scheme on behalf of the Trust. Implementation of the programme in Northland has started with a shipping container located in Kaitaia in the Far North. Council staff will collect the empty containers from the PGG Wrightson stores ensuring that they are triple-rinsed and then deposit them in the shipping container.

In the future additional shipping containers will also be located at the Wasteworks site in Whangarei and at the yet to be completed FNDC Resource Recovery Centre in Kerikeri.

5.4 Where to from here?

Hazardous waste collection

The Regional Council will continue to operate the drop-off points at four PGG Wrightson stores in Northland and will carry out mobile collections as required. Waste hazardous substances that can not be recycled, treated and/or disposed of in NZ will continue to be exported.

The Environmental Risk and Management Authority (ERMA) is currently drafting legislation to include hazardous waste within the HSNO rules.

New Zealand Waste Strategy

In March 2002, the Government released '*The New Zealand Waste Strategy*' (MFE 2002). The Strategy contains national targets for contaminated sites.

Targets for contaminated sites

- By December 2008, all sites on the HAIL list will have been identified and 50 percent will have been subject to a rapid screening system in accordance with the Ministry for the Environment (MFE) Guidelines.
- By December 2010, all sites on the HAIL list will have been subject to a rapid screening system in accordance with the MFE Guidelines, and a remediation programme will have been developed for those at high risk.
- By December 2015, all high-risk contaminated sites will have been managed or remediated. A timeframe will also have been developed to address the management of or remediation of remaining sites.

In line with this strategy the Council is currently working on upgrading the database of sites that have been identified so far. The next step in the workplan is to run all identified sites through the rapid screening system.

5.5 What can you do to help?

There are a few small things that you can do to help minimise the risks of waste hazardous substances on the environment and to people, such as:

- Making sure all waste hazardous substances are disposed of carefully and appropriately. For more information refer to the '**It's time to clean out the shed**' brochure available on the Regional Council website at the following link:

<http://www.nrc.govt.nz/upload/2913/Clean%20out%20your%20shed%20-%20agricchemicals.pdf>

- Dispose of old vehicle parts and batteries appropriately. For more Information refer to the '**Old vehicle parts and used batteries**' fact sheet on the Regional Council website at the following link:

[http://www.nrc.govt.nz/upload/1788/Used%20batteries%20&%20old%20vehicle%20parts%20\(Mar%2007\).pdf](http://www.nrc.govt.nz/upload/1788/Used%20batteries%20&%20old%20vehicle%20parts%20(Mar%2007).pdf)

- Report any incidents involving hazardous wastes to the Regional Council environmental hotline on **0800 504 639**.
- Use alternative 'green' products in your home for cleaning. For more information refer to the '**Green cleaning – healthy alternatives for household cleaning**' brochure available on the Regional Council website at the following link:

<http://www.nrc.govt.nz/upload/3351/Green%20Cleaning%20-%20alternative%20household%20chemicals.pdf>

- Dispose of your household light bulbs appropriately, particularly energy saving light bulbs and fluroscent light bulbs, as these contain mercury. For more information refer to the information on the Ministry for the Environment's website at the following link:

<http://www.mfe.govt.nz/publications/waste/disposal-household-lamps-mar07/disposal-household-lamps-mar07.html>

5.6 Case study 1: HSNO contract with Department of Labour

Gaps have been identified in compliance, coverage and expertise in the area of ecotoxic and toxic substances since the introduction of the Hazardous Substances and New Organisms (HSNO) Act. In August 2003 the Minister for the Environment secured funding to “stimulate and develop activity and involvement of Regional Councils in HSNO enforcement”.

In November 2004 an 18-month trial contract was entered into between the Department of Labour and the NRC to undertake inspections of workplaces storing and using hazardous substances. The contract also requires warranted officers to provide a 24/7 technical advisory service to members of the HSNO Technical Liaison Committee and to attend incidents involving hazardous substances.

Following a successful 18-month trial, a further three-year contract was signed between the Department of Labour and the NRC. Over the past two years the Department of Labour has provided comprehensive training to Council staff. There are presently six warranted HSNO enforcement officers employed by the Council. Two officers are based in Whangarei, with the others located in Kaitaia, Dargaville and Opuia.

Workplace inspections

A major priority in the first period of the contract was to educate operators and owners using or storing hazardous substances through visits to their premises, and to increase the level of awareness of the requirements of HSNO.

The first 18 months of the contract involved monitoring businesses storing and using hazardous substances, which highlighted a number of issues, including the following:

- A general lack of knowledge of all aspects of the HSNO Act 1996.
- A lack of suitably qualified Test Certifiers available within the region to certify new and existing Location Test certificates (replacing Dangerous Goods Licences).
- Lack of hazardous substances signage and emergency plans available at sites storing and using hazardous substances.
- Non-compliance with the HSNO Act (mainly due to the lack of Test Certifiers).

During the 2005/2006 financial year approximately 160 sites storing and using hazardous substances were inspected. The types of businesses inspected included service stations, spray painters, gas installers, water treatment plants, timber preservation plants, schools, fertiliser works, rural retailers and retailers selling fireworks.

Incidents

From December 2004 to December 2006, 66 incidents involving hazardous substances were attended by HSNO enforcement officers. The types of incidents that were attended are shown in table 1 (below).



Table 1: HSNO incidents attended from 1 December 2004 to 31 December 2006.

Incident type	Number
Fires involving hazardous substances	4
Diesel spills on land	5
Incidents involving LPG	7
Incidents involving other gases	2
Acid spill	1
Timber treatment chemical spills	2
Incident involving explosive devices	1
Petrol spills on land	2
Incidents at school laboratories	2
Incidents involving asbestos	2
Incidents involving hazardous substances at sea	1
Incidents involving road tankers	1
Hazardous substances requiring removal for safe storage and disposal	35
Leaking Storage Tanks	1
Total	66

5.7 Case study 2: Remediation of former timber treatment plant

The site, which is approximately two hectares in size and zoned industrial, is located four kilometres west of Paihia and is adjacent to the intersection of the Puketona and Haruru Falls roads. A small stream, which flows through the site, is an unnamed tributary of the Waitangi River.



Site after remediation work has been completed.

Site history

From the early 1960s the site was used for sawmilling and timber preservation. In the early 1980s the sawmill and timber treatment plant was burnt to the ground. A building permit was issued by the then Bay of Islands County Council to rebuild the plant upstream from the Paihia water supply intake. In 1990 the then owner of the site withdrew his application for resource consents for the site and the entire operation was closed down.

During the time that the timber treatment plant operated a number of different methods were used to preserve timber. These included tanalith treatment using copper, chromium and arsenic, a boric treatment using boron salts and immersion treatment using the now banned chemical, pentachlorophenol (PCP).

Initial environmental assessment

Aside from the routine discharge consent compliance monitoring that was carried out at the site from 1984 onward, in June 1994 an initial on-site contamination assessment was undertaken by Council staff.

A number of water and sediment samples were collected from and adjacent to the site. This included areas where it was likely to be contaminated and areas where, due to the distance from the timber preservation plant, there should not have been contamination.

Elevated levels of copper, chromium and arsenic were detected at a number of the sample sites, but no pentachlorophenol. It was concluded that remediation was needed if the site was to be used for other purposes.

Further assessment

In early 2005 a more detailed site assessment was undertaken by Council staff. The aim of the investigation was to more accurately determine the extent of the contamination identified earlier and to collect samples from areas of the site that had not been sampled previously.

This second investigation of the site showed that residual contamination from timber treatment chemicals was confined to an area close to the timber treatment plant and drip pad. The sampling across other areas of the site showed little or no contamination from timber treatment chemicals.

Site remediation

During August 2005 the concrete drip pad was removed. The removal of the pad exposed an area of heavily contaminated soil (approximately eight cubic metres) which was subsequently removed, treated and disposed of in a secure landfill outside the Northland region.

Validation sampling

Following the removal of the soil from below the drip pad, validation sampling was undertaken in the area of excavation. The results of analysis showed that the remaining soils had only slightly elevated levels of contamination from timber treatment chemicals.

Following this round of sampling, fresh uncontaminated clay and soil was utilised to back fill the excavated trench. Further sampling confirmed that the site now complied with the Guidelines for selected timber treatment chemicals (MFE 1997).

5.8 References

ANZECC. (1992). *Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites*. Published by Australian and New Zealand Environment and Conservation Council (ANZECC). Canberra: Australia.

MFE. (1997). *Health and Environmental Guidelines for Selected Timber Treatment Chemicals*. Report produced by the Ministry for the Environment and Ministry of Health. Wellington: New Zealand. Available on the Ministry for the Environment's website at the following link:

<http://www.mfe.govt.nz/publications/hazardous/timber-guide-jun97/>

MFE. (2002) *The New Zealand Waste Strategy: Towards zero waste and a sustainable New Zealand*. Published by the Ministry for the Environment. Wellington: New Zealand. Available on the Ministry for the Environment's website at the following link:

<http://www.mfe.govt.nz/publications/waste/waste-strategy-mar02/index.html>

MFE. (2004). *Hazardous Activities and Industries List (HAIL)*. Published by Ministry for the Environment. Wellington: New Zealand. Available on the Ministry for the Environment's website at the following link:

<http://www.mfe.govt.nz/issues/hazardous/contaminated/hazardous-activities-industries-list.html>

NRC. (2002). *Regional Policy Statement for Northland*. Produced by the Northland Regional Council. Whangarei: New Zealand. Latest version and current plan changes are available on the Regional Council's website at the following link:

<http://www.nrc.govt.nz/Resource-Library-Summary/Plans-and-Policies/Regional-Policy-Statement/>